UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER
AVELLINO, JOSEPH E

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 May 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-51 and 61-89</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-51 and 61-89</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/08</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-51, and 61-83 are pending; claims 1, 19, 35, 40, 45, and 47 are

independent.

Information Disclosure Statement

2.   The IDS dated April 28, 2008 has been considered. See PTO-1449.

Claim Rejections - 35 USC § 103

3.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

        Claims 1-7, 11-16, 18-24, 28-30, 32, 33, 35, 36, 38, 39-41, 43-48, 50, 51, 62, 64,

66, 68, 70, 72, 74-79, and 84-89 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Primak et al. (Pub. No. 2001/0039585) (hereinafter Primak) in view of

Aman et al. (USPN 5,603,029) (hereinafter Aman).

4.   Referring to claim 1, Primak discloses a system for optimizing server selection for

clients from among a plurality of servers in a packet communication network (Figure 1;

abstract), the system comprising:

        a plurality of servers for alternatively responding to client requests (Figure 1,

reference characters 30a-e);

a central server (DNS server) that maintains server selection weights (i.e.

capacity information), and, based on the weights, provides in response to a client

request (i.e. *on receipt of a client query)*, a candidate server list (i.e. either all or a

subset of DNS agents on the server cluster zones for which the DNS server 10 has

received server selection weight information) for responding to a client request to a

network node (i.e. the DNS server) adapted to interrogate (i.e. ping as stated by

Applicant on page 8 of the disclosure) the individual servers represented in the

candidate server list, the central server receiving feedback (i.e. measurement statistics)

indicating service by individual servers in response to client requests by the individual

servers (i.e. via the DNS agents 32 of each cluster) and modifying the server selection

weights based on the feedback (Figure 1; abstract; p. 2, ¶ 25; p. 3, ¶ 31). Primak

furthermore discloses comprising a DNS server 10 which receives the client request

from the client (p. 2, ¶ 25); and based on the client requests, forwards the client

requests to the central server (since the central server is part of the DNS server, it

inherently forwards this request to the server when a resolution is to be made based on

the server cluster.

Primak does not specifically returning a candidate list of at least two candidate

servers back to a DNS from the central server. In analogous art, Aman discloses

another server selection mechanism which discloses generating a plurality of eligible

server lists and candidate server lists and specifies the maximum number of servers

which are passed to a client application (Figures 5-7; col. 18, lines 33-44). It would

have been obvious to one of ordinary skill in the art to combine the teaching of Aman

and its output server list being sent to the DNS server in order to further distribute the

load amongst the servers in the system, thereby further ensuring the likelihood of

overloading any of the servers in the cluster.

5.   Claim 2 is rejected for similar reasons as stated above.

6.   Referring to claim 3, Primak discloses the invention substantively as described in

claim 2. Primak further discloses interrogating candidate servers in the candidate

server list (p. 2, ¶ 25).

7.   Referring to claim 4, Primak discloses the invention substantively as described in

claim 3. Primak further discloses selecting a candidate server based on the

interrogation (p. 3, ¶ 31).

8.   Referring to claim 5, Primak discloses the invention substantively as described in

claim 4. Primak further discloses indicating to the selected candidate server that it has

been selected to provide service to the requesting client (it is inherent that when the

client sends its request to the selected candidate server via a redirection packet, the

server will know that it has been selected to provide service to the requesting client,

since the only way for the client to be serviced by the particular server in the cluster is to

request the address from the DNS server) (p. 3, ¶ 31).

9.   Referring to claim 6, Primak discloses the invention substantively as described in claim 3. Primak further discloses the DNS server returns to the requesting client the address of the first server to respond to the interrogation (Primak uses this term as the "shortest RTT" or Round Trip Time; since all interrogation requests are sent virtually simultaneously, it would be deduced that the server with the lowest RTT would be the first server to respond to the interrogation) (p. 3, ¶ 29).

10.   Claim 7 is rejected for similar reasons as stated above.

11.   Referring to claim 11, Primak discloses each candidate server in the candidate server list is unique from each other candidate server in the list (i.e. there are no duplicate servers returned to the client, merely only ones which are above threshold) (Figure 1; p. 2, ¶ 23; p. 3, ¶ 31).

12.   Referring to claim 12, Primak discloses the feedback occurs at a requested event (i.e. when requested to by the DNS server) (p. 3, ¶ 27-29).

13.   Referring to claim 13, Primak discloses the weights are based on a bias factors to reduce convergence time, the bias factors including geographical location (Primak discloses returning the server with the shortest RTT, or round trip time, the server geographically closest to the client will have the higher RTT, and thereby be biased towards that particular server in the weighting of the servers) (p. 2, ¶ 29).

14.   Referring to claim 14, Primak discloses the invention substantively as described in claim 1, however does not specifically state the weights sum to one, however it is well known that many routing systems utilize a percentage system allocating x percent to a particular server, y percent to another server, etc. These percentages result in a totality of 100 percent, which equals one. By this rationale, "Official Notice" is taken that providing the weights sum to one is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Primak to include the weights summing to one in order to reduce complexity of the system.

15.   Referring to claim 15, Primak discloses the invention substantively as described in claim 1. Primak does not disclose the central server includes vectors of server selection weights for subsets of clients. However, it is common knowledge that a DNS server caches certain aspects of a client's session with a server (i.e. maintains state information and would be able to redirect to an appropriate server if the client has an affinity towards that particular machine, either geographical or security). Taken in context with the invention disclosed in Primak, it would have been obvious to one of ordinary skill in the art to include caching weights of servers for particular clients for faster redirection and less transactional overhead.

16.   Referring to claim 16, Primak discloses the central server includes multiple central servers organized as a distributed system (p. 2, ¶ 25).

17.   Referring to claim 18, Primak-Aman discloses the candidates represented in the

candidate server list are pseudo-randomly selected based on the weights (they are

based on feedback received from the servers, which factor upon the current loads of the

servers, thereby providing a randomness to the selection factor, there is no actual

scheme, such as round-robin, to select the next server, thereby it is considered a

pseudo-random selection) (Primark: e.g. abstract; Leighton: "random priority list of

desired servers", see rejections above).

18.   Claims 19-24, 28-30, 32, 33, 35, 36, 38, 39-41, 43-48, 50, 51, 62, 64, 66, 68, 70,

72, 74-79, and 84-89 are rejected for similar reasons as stated above. Furthermore

Primak discloses the servers include multiple servers organized as a distributed system

(i.e. server clusters) (Figure 1). Primak discloses the DNS interrogating the candidate

servers to measure server capacity information (i.e. server congestion) (p. 2, ¶ 23).

Primak does not specifically disclose that the weights sum to one, however this is

supplied in Logan (Table V, col. 9: "traffic dist" used as percentages). Primak

furthermore discloses the network node (i.e. DNS server) choosing the server from the

candidate server list based on probes (i.e. see rejection above).

Claims 17, 34, and 80 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Primak-Aman in view of Meek et al. (USPN 6,539,426) (hereinafter

Meek).

19.   Referring to claim 17, Primak-Aman discloses the invention substantively as

described in claim 1. Primak-Aman does not disclose the client interrogates the

candidate servers in the list to measure network performance. Meek discloses another

load balancing method wherein client interrogates the candidate servers in the list to

measure network performance (col. 10, lines 6-27). It would be obvious to a person of

ordinary skill in the art at the time the invention was made to combine the teaching of

Meek with Primak-Aman to adequately provide business applications programs that are

distributed amongst the servers in the network providing redundancy and increased

application usage as supported by Meek (col. 1, lines 45-50).

20.   Claims 34 and 80 are rejected for similar reasons as stated above.

        Claims 8-10, 25-27, 37, 42, 49, 73, and 81-83 are rejected under 35 U.S.C.

103(a) as being unpatentable over Primak-Aman in view of Guenthner et al. (USPN

6,134,588) (hereinafter Guenthner).

21.   Referring to claim 8, Primak in view of Logan discloses the invention

substantively as described in claim 1. Primak in view of Logan does not disclose the

candidate server list includes extra, randomly selected, candidate servers beyond the

candidate servers selected based on the weights. In analogous art, Guenthner

discloses another server load balancing method wherein the candidate server list

includes extra, randomly selected, candidate servers beyond the candidate servers selected based on the weights (e.g. abstract; Figure 8; col. 8, lines 25-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Guenthner with Primak to provide a client-side solution to ensure availability of Web services to a Web browser as supported by Guenthner (col. 1, lines 65-67).

22.   Referring to claims 9 and 10, Primak-Aman discloses the invention substantively as described in claim 1. Primak-Aman does not disclose the randomly selected candidate servers are a fixed number/percentage (a percentage is a number) beyond the number of servers selected based on the weights. Guenthner discloses including randomly selected servers based on the weighting (e.g. abstract; Figure 8; col. 8, lines 25-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Guenthner with Primak to provide a client-side solution to ensure availability of Web services to a Web browser as supported by Guenthner (col. 1, lines 65-67).

23.   Claims 25-27, 37, 42, 49, 73, and 81-83 are rejected for similar reasons as stated above.

        Claims 61, 63, 65, 67, 69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primak-Aman in view of Lin (USPN 6,298,451).

24.   Referring to claim 61, Primak-Aman discloses the invention substantively as described in claim 1. Primak-Aman does not specifically disclose the client is the node adapted to interrogate individual servers. In analogous art, Lin discloses another system for optimizing server selection which discloses a client interrogating servers from a candidate server list (col. 5, lines 7-19; col. 6, lines 15-39). It would have been obvious to one of ordinary skill in the art to combine the teaching of Lin with Primak-Aman in order to reduce the load off of the DNS server of Primak-Aman in order to allow the client, which is less loaded than a DNS server, the task of determining if a candidate server is available, thereby reducing overhead transactions on the DNS server, thereby allowing more efficient processing of incoming DNS requests.

25.   Claims 63, 65, 67, 69, and 71 are rejected for similar reasons as stated above.

Response to Arguments

26.   Applicant's arguments filed May 22 2008 have been fully considered but they are moot in view of the new grounds of rejection presented above.

Conclusion

27.   Applicant has failed to seasonably challenge the Examiner's assertions of well known subject matter in the previous Office action(s) pursuant to the requirements set forth under MPEP §2144.03. A "seasonable challenge" is an explicit demand for

evidence set forth by Applicant in the next response. Accordingly, the claim limitations

the Examiner considered as "well known" in the first Office action, are now established

as admitted prior art of record for the course of the prosecution. See In re Chevenard,

139 F.2d 71, 60 USPQ 239 (CCPA 1943).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph E. Avellino whose telephone number is (571)

272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey C. Pwu can be reached on (571)272-6798. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph E. Avellino/

Primary Examiner, Art Unit 2146